

vein which extends from costa to second vein, a large one over apex of second vein, and a much less distinct one at apex of third vein. Calyptræ white. Halteres yellow.

Eyes separated by a little over width across posterior ocelli; arista pubescent; parafacial at base of antennæ as wide as third antennal segment, narrowed below. Post-humeral bristle duplicated; three or four pairs of weak acrostichals in front of suture; prealar very long. Abdomen depressed; hypopygium small. Fore tibia with one antero-dorsal and one posterior median bristle, apical posterior bristle long, straight; mid-tibia with one antero-dorsal, two postero-dorsal, and two posterior bristles; hind femur with a complete series of irregular antero-ventral bristles and some widely spaced postero-ventral bristles; hind tibia with two postero-dorsal, one antero-ventral, and three antero-dorsal bristles, the posterior surface bare. Costal thorn minute; wing pointed, third vein ending almost in tip.

Length 4-5 mm.

Type and paratype, La Plata City, Argentina, 10. vi. 1896 (O. Thomas).

This species bears a striking resemblance to *Hylemyia punctipennis*, Wiedemann, but may be separated from it by the shorter-haired arista, larger single spot on outer cross-vein, presence of only two postero-dorsal hind tibial bristles, and absence of posterior setulæ on hind tibia.

L.—A Note on the Dipterous Subfamily Ditomyinæ, with Descriptions of new Recent and Fossil Forms. By F. W. EDWARDS.

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IN a recently published paper* Keilin has discussed in detail the larval morphology of three European genera formerly included in the Mycetophilidæ, subfamily Mycetobiinæ, and has given very strong reasons for considering that *Mycetobia* is closely related to *Anisopus* (*Rhyphus*), while *Ditomyia* and *Symmerus* are widely different and quite unrelated either to *Mycetobia* or any other Mycetophilidæ; he has even proposed the new family-name Ditomyiidæ for these two genera, considering them to be more closely related to Bibionidæ than to Mycetophilidæ.

In regard to *Mycetobia*, I have been able to confirm †

* Ann. & Mag. Nat. Hist. (9) iii. pp. 33-42, pls. ii.-v. (Jan. 1919).

† *Ibid.* (8) xvii. pp. 108-116 (Jan. 1916).

from a study of the adults the conclusion which Keilin had already arrived at from a close examination of the larvæ. At his suggestion I have re-examined the adult morphology of *Ditomyia* and *Symmerus*, in order to ascertain whether any characters exist which will mark off these genera sharply from all other Mycetophilidæ. The search has in this instance proved almost fruitless: the points of resemblance between these genera and the Ceroplatinæ are so numerous and important, and the distinctions between them and the Bibionidæ so obvious, that it is difficult not to conclude that the two genera in question must remain within the Mycetophilidæ. If the Ditomyiidæ be recognised as a distinct family, adult morphology would indicate that at least the same rank should be accorded to Diadocidinae, Pachyneurinae, Bolitophilinae, and Ceroplatinæ. This, Dr. Keilin assures me, would be unjustifiable in view of larval morphology.

The following appear to me to be the most important characters of the Ditomyinae:—(1) The rather long vein R_{2+3} . This is almost the only constant point of difference between the Ditomyinae and all other Mycetophilidæ; it is only a relative character, and therefore can hardly be used by itself for family definition; (2) The vestigial subcosta, which in only one case reaches the costa. This provides the readiest distinction from the Ceroplatinæ, and is rather a surprising feature considering the decidedly primitive nature of the rest of the venation; (3) The shape of the hypopleuræ, which differ from those of most of the other subfamilies in being much less prominent, gently rounded, and not in the least produced backwards. The distinction from the Ceroplatinæ in this respect is quite marked, from the Diadocidinae and Bolitophilinae less so. Another small point is (4), the tendency to the development of a strong bristle about the middle of the posterior side of the posterior side of the hind coxæ, and of a tuft of strong bristles on each side of the mesonotum just in front of the wing-base. This, however, is not at all well marked in the European forms. It may also be noted (5) that there is a tendency to a strong emargination of the eyes and the development of a "bridge" similar to that of the Sciaridæ, but there is no trace of this in the type-genus *Ditomyia*.

On this definition the genera *Arctoneura*, *Casa*, and *Nervijuncta*, placed by Johannsen in the Ceroplatinæ, should be transferred to the Ditomyinae; but, on the other hand, *Palæoplatyura*, which was placed by Johannsen in the Mycetobiinae, will go to the Ceroplatinæ.

The known genera of the Ditomiyinæ may be separated by the following key :—

1. Radio-median cross-vein present; eyes entire, or only moderately emarginate, at any rate not nearly meeting; antennæ flattened (Ditomiyini) 2.
- Radio-median cross-vein obliterated; eyes deeply emarginate above the antennæ, with narrow dorsal strips which almost meet in the middle line (in both sexes); antennæ slender, cylindrical (Nervijunctini) 4.
2. Medio-cubital cross-vein vertical or even slightly outwardly oblique, joining Cu_1 near the base; R_{2+3} nearly parallel with R_{4+5} , the base being strongly angulated or arched; M_{1+2} strongly curved at base, M_3 being straight. *Centrocnemis*.
- Medio-cubital cross-vein inwardly oblique, in a line with the longer basal portion of Cu_1 ; R_{2+3} more divergent from R_{4+5} , less arched at the base; M evenly forked 3.
3. Eyes moderately emarginate; R_{2+3} not or scarcely longer than the second portion of Rs *Symmerus*.
- Eyes entire; R_{2+3} much longer than the second portion of Rs *Ditomya*.
4. Fusion of M and Rs very short; $m-cu$ outwardly oblique; R_{2+3} shorter than the second section of Rs *Nervijuncta*.
- Fusion of M and Rs longer (when M is complete); $m-cu$ vertical; R_{2+3} longer than the second section of Rs 5.
5. Tip of wing truncate (in male only?); veins all well-marked; wings bearing scales in certain areas *Arctoneura*.
- Tip of wing not truncate; parts of media and cubitus faint or absent; wings without scales. [*Arctoneura*, subgen.] *Casa*.

Centrocnemis was sunk under *Symmerus* by Johaussen, but appears to me to be well-distinguished; it will include all the known Neotropical members of the subfamily, the Holarctic species all remaining in *Symmerus*.

Centrocnemis fuscinervis, sp. n.

Head dark grey; palpi blackish; antennæ dark brown, the scape ochreous. Thorax grey, with an ochreous tinge; mesonotum with three separate black stripes, scutellum ochreous; pubescence yellowish, bristles dark brown.

Postnotum and hypopleuræ bare. *Abdomen* with the first segment blackish, posterior margin ochreous, clothed with long pale hair, without differentiated bristles (remainder of abdomen missing). *Legs* ochreous, tibiæ and tarsi somewhat darker; posterior coxæ dark; tibial spurs and spines black. Spines of front tibiæ not longer than the diameter of the tibia, of middle tibiæ longer, of hind tibiæ about twice as long as the diameter. *Wings* hyaline; cross-veins, bases of *Rs*, R_{2+3} , and M_{1+2} , and terminal portions of all the veins bordered with brown. Microtrichia absent; macrotrichia spread over nearly the whole surface, *Sc* reaching to about half the length of *R*, gradually fading out and not reaching the costa; basal section of *Rs* strongly curved, longer than *r-m*; R_{2+3} about as long as *Rs*, its base almost vertical, sometimes a short stump at the bend; base of M_{1+2} a little proximal to that of R_{2+3} . Halteres ochreous.

Wing-length 5.2–6.5 mm.

TASMANIA: Mangalore, two specimens, 4. x. 1913 and 14. ix. 1914 (*A. White*). In the British Museum.

Centrocnemis aculeata, sp. n.

Head black, somewhat shining; palpi brownish; antennæ missing. *Thorax* shining black; shoulders and lateral margins of mesonotum yellowish; pubescence and bristles yellowish; postnotum bare, hypopleuræ with one or two hairs. *Abdomen* orange; first segment and posterior margins of second, third, and fourth tergites black; most of seventh and eighth tergites brown; eighth segment large, much longer than the seventh. *Legs* with the coxæ ochreous; femora ochreous, dark brown at the base, especially the hind pair; spines of front tibiæ short, of middle tibiæ long, nearly three times as long as the diameter of tibia, black; middle tibial spurs ochreous; hind tibiæ and tarsi missing. *Wings* with a very slight yellowish tinge; tip somewhat darkened, the space between R_{2+3} and the costa more distinctly so. Microtrichia absent; macrotrichia present over the whole surface, except at the base. *Sc* very short, but reaching costa. Base of *Rs* straight, vertical, not longer than *r-m*; R_{2+3} a little longer than *Rs*, strongly curved at the base. Halteres ochreous.

Length of body 6 mm.; wing 5.2 mm.

TASMANIA: Mount Wellington, 7. x. 1912 (*A. White*), 1 ♀. *Type* in the British Museum.

Centrocnemis insolita (Walker).

Platyura insolita, Walker, Trans. Linn. Soc. xvii. p. 335 (1856).

This differs from the two Tasmanian species described above in having distinct microtrichia as well as macrotrichia on the wing. The type-species (*C. stigmatica*, Phillippi, also from Chile) may agree with *C. insolita* in this respect, but the other South American species in the British Museum (*C. bifasciata*, Williston) has no microtrichia.

†*Symmerus balticus*, sp. n., ♂.

Closely allied to *S. annulatus*, Winn., differing as follows:— Size rather smaller (body 6 mm.). Abdomen unbanded, the first five segments rather light brown, the next two blackish; hypopygium yellow, its structure similar to that of *S. annulatus*, but the anal lamellæ rather longer and distinctly narrower (about 5·5 instead of 4·5 times as long as broad), the ninth sternite not clearly visible, but apparently without the two long horny points which occur in *S. annulatus*. Fork of media somewhat shorter than in *S. annulatus*, its base scarcely nearer the base of the wing than is the base of R_{2+3} .

Type, a single male in the British Museum (Geological Department), from the Baltic amber (Miocene) of East Prussia, labelled "No. 13628, Mus. Stantien & Becker. 405. Dr. Richard Klebs." Geol. Dept. no. In. 18679.

This is the first member of the subfamily which has been recorded in the fossil state, though it is probable that *Mycetobia defectiva*, Loew MS., mentioned by Meunier (Ann. Soc. Sci. Bruxelles, xxviii. 1904, p. 89) as having no subcosta, may be a *Symmerus*, possibly even identical with *S. balticus*.

Arctoneura (Casa) wakefieldi, sp. n., ♀.

Head: vertex ochreous, a blackish spot behind each ocellus; ocelli almost in a straight line. Frons and face dark brown, the frons very small, owing to the antennæ being inserted close below the narrow "bridge" of the eyes; the "bridge" is incomplete, the eyes being narrowly separated in the middle. Proboscis light brown, palpi darker brown. Antennæ yellowish, the first thirteen flagellar joints with a blackish ring in the middle, the last two joints entirely dark. *Thorax* brownish, mesonotum with three dark reddish-brown

stripes, separated by narrower yellowish stripes, which curve outwards some distance behind the front margin and are there connected with elongate yellowish spots on the margin of the mesonotum just in front of the wing-base; the middle dark stripe is also divided by a narrow yellow line. Scutellum with four strong bristles. Pleuræ and postnotum bare. *Abdomen* dark brown, the hind margin of each segment narrowly pale ochreous; anal cerci yellow. First tergite with a group of four to six strong bristles at each side near the base. *Legs* ochreous, tibiæ and tarsi somewhat darker. Hind coxæ with several small bristles towards apex, two more near base, one longer and stronger one near the middle. *Wings* of normal shape, the tip not truncate; venation as in *A. hudsoni* (Marshall), except that R_{4+5} is not quite so strongly arched, and R_{2+3} is nearly straight, arched only at the base; costa scarcely extending beyond tip of R_{4+5} . No trace of scales can be seen, but macrotrichia are present over the greater part of the apical half of the wing, especially in the darkened areas. The stem of the median fork, the basal half of M_{1+2} , and the base of M_3 are rather faint, the remainder of these veins well-marked, dark brown, as are all the remaining veins—except for a short yellowish portion at the tip of R_{2+3} and on the costa above it. A large dark brown spot over the base of R_s , and a smaller one round Cu_{1a} ; a dark fascia beyond the middle of the wing, darkest towards the costa, leaving a clear spot in the base of cell R_{2+3} , and a clear streak along base of vein M_{1+2} , but extending basally along Cu_1 and apically along M_3 and on each side of M_{1+2} . Some irregular dark clouds on the apical fourth of the wing. *Halteres* yellowish, base of knob dark.

Length of body 8 mm.; wing 8×2.8 mm.

NEW ZEALAND: one female collected by C. M. Wakefield, 1880; no exact data, but probably from Canterbury. Type in the Oxford Museum.

The structure and coloration are both so very much like Marshall's description of *A. hudsoni* that I have very little hesitation in referring this insect to the genus *Arctoneura*, in spite of the striking difference in the shape of the wing. Possibly the truncated wing-tip of *A. hudsoni* may be a male character only, or Marshall may have described a deformed specimen. The absence of scales on the wings, the rather different wing-markings, and the ringed antennæ should suffice to distinguish *A. wakefieldi* from *A. hudsoni*, if either of the above suggestions should prove correct.

There is in some respects an even closer resemblance to *Casa tridens*, Hutton, which, according to Marshall's

description, differs from our species chiefly in the thoracic markings and in the absence of certain portions of the median vein.

Precisely the same portions of this vein are faint in *A. wakefieldi*, which can therefore be safely regarded as forming a complete connecting-link between the genera *Arctoneura* and *Casa*. These two genera should probably be united.

LI.—*A Note on the Subfamily Bruchomyiinae (Diptera Nematocera)*. By F. W. EDWARDS.

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IN a recently published paper* Alexander has described a remarkable new Tanyderid fly, to which he gives the name *Bruchomyia argentina*, erecting the new subfamily Bruchomyiinae for it, on account of the very wide divergence from the previously known members of the family Tanyderidae. The discovery of a fossil representative of this group in the amber collections in the British Museum is of no little interest, and it is therefore described below. The fossil form is obviously related to *Bruchomyia*, but differs too much from it to be placed in the same genus; it appears to be extremely similar to *Palæosycorax tertiarie*, Meunier (Misc. Ent. xiii. p. 50, 1905), and is certainly congeneric and just possibly conspecific with this insect, but the differences in the number of antennal joints, in the length of the subcosta, and in the male hypopygium seem to indicate a specific difference. Even if these differences prove to be only individual, the incompleteness of Meunier's description (he knew only the male) will justify the description of the specimens under my notice.

PALÆOSYCORAX, Meunier.

Allied to *Bruchomyia*, Alexander, but differing (*inter alia*) in the 16-jointed antennæ, spurless tibiæ, presence of vein Sc₁, shorter R₂, and shorter and not undulated Cu₂.

Palæosycorax molophilina, sp. n.

Colour apparently uniformly brownish; pubescence of

* "A new Subfamily of Tanyderid Flies (Diptera)," Ann. Ent. Soc. Amer. xiii. pp. 402-406, pl. xxxii. (Dec. 1920).